

Appl. No. 10/624,191
Amdt. Dated October 18, 2006
Reply to Office action of April 18, 2006

Amendments to the Claims:

Please amend claims 1, 12, 14, 22, 32, 35-36, 85, 92, 94, 100, 102, and 106.

Please cancel claims 9, 30 and 34.

These amendments introduce no new matter and support for the amendment is replete throughout the specification and claims as originally filed. These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter, or agreement with any objection or rejection of record.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A parallel reaction device, comprising:

(a) a reaction block comprising a reaction block body having an upper surface, a lower surface, fours sides, and an array of reaction wells, wherein the fours sides of the reaction block body have disposed therein a substantially continuous recessed region, and wherein at least one reaction well in the array is disposed through the reaction block, which reaction well comprises an inlet portion and an outlet portion;

(b) a top gasket positioned proximal to the upper surface of the reaction block;

(b)-(c) a top lid attached to the reaction block by at least one top attachment component, which top lid comprises at least one protrusion disposed on a surface that engages the reaction block, which protrusion presses a the top gasket into contact with the inlet portion of the reaction well to seal the inlet portion; and,

(e)-(d) a bottom lid attached to the reaction block by at least one bottom attachment component, which bottom lid presses a bottom gasket into contact with the outlet portion of the reaction well to seal the outlet portion when the parallel reaction device comprises the bottom gasket.

2. (Original) The parallel reaction device of claim 1, wherein the reaction block is disposable.

3. (Original) The parallel reaction device of claim 1, wherein the reaction block comprises cavities disposed between and proximal to inlet portions of adjacent reaction wells to direct fluidic materials away from other inlet portions.
4. (Original) The parallel reaction device of claim 1, wherein at least a segment of the reaction well comprises an inner and an outer cross-sectional shape independently selected from the group consisting of: a regular n-sided polygon, an irregular n-sided polygon, a triangle, a square, a rounded square, a rectangle, a rounded rectangle, a trapezoid, a circle, and an oval.
5. (Original) The parallel reaction device of claim 1, wherein at least two regions of the reaction well comprise different inner or outer cross-sectional dimensions.
6. (Original) The parallel reaction device of claim 1, wherein one or more reaction wells further comprise a filter disposed therein.
7. (Original) The parallel reaction device of claim 1, wherein outlet portions of the array of reaction wells comprise a footprint that corresponds to wells of a micro-well plate.
8. (Original) The parallel reaction device of claim 1, wherein the outlet portion comprises an outlet spout having a smaller inner cross-sectional dimension than other regions of the reaction well, and wherein a transition area between the outlet spout and the other regions in the reaction well is abrupt or tapered.
9. (Cancelled)
10. (Original) The parallel reaction device of claim 1, wherein the protrusion comprises at least one protruding annular ridge that presses the top gasket into contact with the inlet portion of the reaction well to radially seal the inlet portion.
11. (Original) The parallel reaction device of claim 1, wherein the top lid comprises an array of protrusions that corresponds to the array of reaction wells.
12. (Currently amended) The parallel reaction device of ~~claim 1~~claim 13, wherein the top attachment component comprises at least one pair of hinges and at least one latch that

are arranged to generate the top lid produces a substantially even clamp load across all inlet portions.

13. (Original) The parallel reaction device of claim 1, wherein the top attachment component comprises at least one hinge and at least one latch.

14. (Currently amended) The parallel reaction device of ~~claim 1~~ claim 15, wherein the bottom attachment component comprises at least one pair of hinges and at least one latch that are arranged to generate the bottom lid produces a substantially even clamp load across all outlet portions.

15. (Original) The parallel reaction device of claim 1, wherein the bottom attachment component comprises at least one hinge and at least one latch.

16. (Original) The parallel reaction device of claim 1, wherein the bottom lid further comprises at least one protrusion disposed on a surface that engages the reaction block, which protrusion presses the bottom gasket into contact with the outlet portion of the reaction well to seal the outlet portion.

17. (Original) The parallel reaction device of claim 1, wherein the top and bottom lids are removably attached to the reaction block.

18. (Original) The parallel reaction device of claim 1, wherein the top and bottom lids open independently of one another.

19. (Original) The parallel reaction device of claim 1, wherein the top and bottom lids comprise metallic or polymeric materials.

20. (Original) The parallel reaction device of claim 1, wherein the top and bottom lids each comprise at least a first alignment structure complementary to at least a second alignment structure on a controller apparatus to align the parallel reaction device relative to the controller apparatus.

21. (Original) The parallel reaction device of claim 1, wherein the top gasket comprises at least one protrusion, which protrusion axially aligns with the inlet portion.

22. (Currently amended) The parallel reaction device of claim 1, further comprising a bottom gasket, wherein the bottom gasket comprises at least one protrusion, which protrusion axially aligns with the outlet portion.
23. (Original) The parallel reaction device of claim 1, wherein the top and bottom gaskets comprise sheets of gasketing material.
24. (Original) The parallel reaction device of claim 1, wherein at least one of the top and bottom gaskets comprises an array of protrusions, wherein at least one protrusion axially aligns with the reaction well.
25. (Original) The parallel reaction device of claim 1, wherein the reaction block comprises one or more of: glass, metal, or a polymer.
26. (Original) The parallel reaction device of claim 25, wherein the polymer comprises polytetrafluoroethylene.
27. (Original) The parallel reaction device of claim 1, wherein the reaction block comprises 6, 12, 24, 48, 96, 384, 1536, or more reaction wells.
28. (Original) The parallel reaction device of claim 27, wherein each reaction well is disposed through the reaction block.
29. (Original) The parallel reaction device of claim 1, wherein the top lid further comprises an array of apertures disposed through the top lid, wherein at least one aperture axially aligns with the reaction well.
30. (Cancelled)
31. (Original) The parallel reaction device of claim 29, wherein the aperture is tapered.
32. (Currently amended) The parallel reaction device of claim 29, wherein each member of the array of apertures axially aligns with a different-a member reaction well of the reaction block.
33. (Original) The parallel reaction device of claim 29, wherein the protrusion comprises a protruding annular ridge disposed around the aperture.

34. (Cancelled)

35. (Currently amended) The parallel reaction device of claim 1, wherein the reaction block comprises at least one pair of substantially opposing the substantially continuous recessed regions disposed in opposing surfaces on the four sides of the reaction block are positioned proximal to a midpoint of each surface, which opposing recessed regions mount the top and bottom attachment components between upper and lower surfaces of the reaction block.

36. (Currently amended) The parallel reaction device of ~~claim 35~~ claim 1, further comprising a band disposed around the reaction block and comprising one or more band portions positioned in the substantially continuous recessed region of the reaction block, and wherein

(i) the top and bottom attachment components comprise: ~~(i) a band disposed around the reaction block in the opposing recessed regions, wherein the band comprises at least one first top hinge component, at least one first top latch component, at least one first bottom hinge component, and at least one first bottom latch component, which components are attached to the one or more band portions;~~

(ii) the top lid comprises at least one second top hinge component and at least one second top latch component attached to the top lid, wherein the second top hinge component removably engages the first top hinge component and the second top latch component removably engages the first top latch component; and,

(iii) the bottom lid comprises at least one second bottom hinge component and at least one second bottom latch component attached to the bottom lid, wherein the second bottom hinge component removably engages the first bottom hinge component and the second bottom latch component removably engages the first bottom latch component.

37. (Original) The parallel reaction device of claim 36, wherein each hinge component independently comprises a male or a female lift-off hinge component.

38. (Original) The parallel reaction device of claim 36, wherein each latch component independently comprises a latch body or a keeper plate.

39. (Original) The parallel reaction device of claim 38, wherein the latch body comprises a rotatable draw latch body.

40. – 71. (Cancelled)

72. (Withdrawn) A reaction block comprising an array of reaction wells, wherein at least one reaction well in the array is disposed through the reaction block, which reaction well comprises an inlet portion and an outlet portion, which reaction block comprises at least one pair of substantially opposing recessed regions disposed in opposing surfaces of the reaction block proximal to a midpoint of each surface, which opposing recessed regions mount at least one lid attachment component.

73. (Withdrawn) The reaction block of claim 72, wherein the reaction block is disposable.

74. (Withdrawn) The reaction block of claim 72, wherein the reaction block comprises cavities disposed between and proximal to inlet portions of adjacent reaction wells to direct fluidic materials away from other inlet portions.

75. (Withdrawn) The reaction block of claim 72, wherein at least a segment of the reaction well comprises an inner and an outer cross-sectional shape independently selected from the group consisting of: a regular n-sided polygon, an irregular n-sided polygon, a triangle, a square, a rounded square, a rectangle, a rounded rectangle, a trapezoid, a circle, and an oval.

76. (Withdrawn) The reaction block of claim 72, wherein at least two regions of the reaction well comprise different inner or outer cross-sectional dimensions.

77. (Withdrawn) The reaction block of claim 72, wherein one or more reaction wells further comprise a filter disposed therein.

78. (Withdrawn) The reaction block of claim 72, wherein outlet portions of the array of reaction wells comprise a footprint that corresponds to wells of a micro-well plate.

79. (Withdrawn) The reaction block of claim 72, wherein the outlet portion comprises an outlet spout having a smaller inner cross-sectional dimension than other regions

of the reaction well, and wherein a transition area between the outlet spout and the other regions in the reaction well is abrupt or tapered.

80. (Withdrawn) The reaction block of claim 72, wherein the reaction block comprises one or more of: glass, metal, or a polymer.

81. (Withdrawn) The reaction block of claim 80, wherein the polymer comprises polytetrafluoroethylene.

82. (Withdrawn) The reaction block of claim 72, wherein the reaction block comprises 6, 12, 24, 48, 96, 384, 1536, or more reaction wells.

83. (Withdrawn) The reaction block of claim 82, wherein each reaction well is disposed through the reaction block.

84. (Cancelled)

85. (Currently amended) A reaction block container, comprising:

(a) a band that comprises one or more band portions and having attached thereto at least one first top hinge component, at least one first top latch component, at least one first bottom hinge component, and at least one first bottom latch component, ~~and wherein portions of the band are capable of being mounted in opposing recessed regions on a reaction block;~~

(b) a top lid comprising at least one second top hinge component and at least one second top latch component attached to the top lid, wherein the second top hinge component engages the first top hinge component and the second top latch component removably engages the first top latch component; and,

(c) a bottom lid comprising at least one second bottom hinge component and at least one second bottom latch component attached to the bottom lid, wherein the second bottom hinge component engages the first bottom hinge component and the second bottom latch component removably engages the first bottom latch component.

86. (Original) The reaction block container of claim 85, wherein each hinge component independently comprises a male or a female lift-off hinge component.

87. (Original) The reaction block container of claim 85, wherein each latch component independently comprises a latch body or a keeper plate.

88. (Original) The reaction block container of claim 87, wherein the latch body comprises a rotatable draw latch body.

89. (Original) The reaction block container of claim 85, wherein the top lid, the bottom lid, or both lids further comprise at least one protrusion disposed on a surface that engages a reaction block, which protrusion presses a gasket into contact with at least a portion of at least one reaction well when the reaction block container further comprises the reaction block and the gasket.

90. (Original) The reaction block container of claim 85, wherein the top and bottom lids open independently of one another.

91. (Original) The reaction block container of claim 85, wherein the top lid further comprises an array of apertures disposed through the top lid, wherein at least one aperture axially aligns with at least one reaction well disposed in a reaction block.

92. (Currently amended) The reaction block container of claim 91, wherein each member of the array of apertures axially aligns with a ~~different~~ member reaction well disposed in the reaction block.

93. (Original) The reaction block container of claim 91, further comprising a protruding annular ridge disposed around the aperture.

94. (Currently amended) A reaction block container, comprising:

(a) a band that comprises one or more band portions and having attached thereto at least one first top hinge component, at least one first top latch component, at least one first bottom hinge component, and at least one first bottom latch component, ~~and wherein portions of the band are capable of being mounted in opposing~~ wherein the band is configured to be disposed in recessed regions on four sides of a reaction block;

(b) a top lid comprising at least one protrusion disposed on a surface that engages a reaction block, ~~which protrusion is capable of pressing and positioned to press~~ a gasket into contact with at least a portion of at least one reaction well of the reaction block, and at least one

second top hinge component and at least one second top latch component attached to the top lid, wherein the second top hinge component engages the first top hinge component and the second top latch component removably engages the first top latch component; and,

(c) a bottom lid comprising at least one second bottom hinge component and at least one second bottom latch component attached to the bottom lid, wherein the second bottom hinge component engages the first bottom hinge component and the second bottom latch component removably engages the first bottom latch component.

95. (Original) The reaction block container of claim 94, wherein each hinge component independently comprises a male or a female lift-off hinge component.

96. (Original) The reaction block container of claim 94, wherein each latch component independently comprises a latch body or a keeper plate.

97. (Original) The reaction block container of claim 96, wherein the latch body comprises a rotatable draw latch body.

98. (Original) The reaction block container of claim 94, wherein the top and bottom lids open independently of one another.

99. (Original) The reaction block container of claim 94, wherein the top lid further comprises an array of apertures disposed through the top lid, wherein at least one aperture axially aligns with at least one reaction well disposed in a reaction block.

100. (Currently amended) The reaction block container of claim 99, wherein each member of the array of apertures axially aligns with a ~~different member~~ reaction well disposed in the reaction block.

101. (Original) The reaction block container of claim 99, wherein the protrusion comprises a protruding annular ridge disposed around the aperture.

102. (Currently amended) A lid comprising a top surface, a bottom surface, and at least one protrusion, capable of pressing wherein the protrusion is positioned in a bottom surface of the lid to press a gasket into contact with at least a portion of at least one reaction well of a reaction block comprising an array of reaction wells to seal the reaction well when the lid is attached to the reaction block.

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103. (Original) The lid of claim 102, wherein the lid comprises an array of protrusions corresponding to the array of reaction wells.
104. (Original) The lid of claim 102, further comprising an array of apertures disposed through the lid, wherein at least one aperture axially aligns with the reaction well.
105. (Original) The lid of claim 104, wherein the aperture is tapered.
106. (Currently amended) The lid of claim 104, wherein each member of the array of apertures axially aligns with a different member reaction well.
107. (Original) The lid of claim 104, wherein the protrusion comprises a protruding annular ridge disposed around the aperture.
108. (Original) The lid of claim 102, further comprising at least one attachment component to attach the lid to the reaction block.
109. (Original) The lid of claim 108, wherein the attachment component comprises at least one latch and at least one hinge.
- 110–119. (Cancelled)